



Not All “Bugs” are Bugs!

Now that the insect population has pretty much settled in for the winter, let's review some information about a couple of orders of insects.

We'll look at the differences between true bugs and beetles. At first glance, they appear to be the same kind of critters. But there are important anatomical structures that make them belong to different insect orders.

Probably the most obvious difference is the type of mouthparts. Beetles have biting-chewing mouthparts, while true bugs have piercing-sucking beaks. Another characteristic is that beetles have the first pair of wings modified into hard covers (elytra) that conceal and protect the membranous hind flight wings. Bugs, on the other hand, have the first pair of wings half leathery and half membranous. This gives the true bugs their order name, Hemiptera, which means "half-wing". The first pair of wings also overlap at the outer, membranous half, giving the appearance of a triangle shape at the rear end of the "beastie". Beetles have the first pair of wings meeting in a straight line from front to back. Bugs are also usually flat on the top side of their body and rounded underneath, sort of a boat shape if you use your imagination. Beetles, on the other hand, are normally rounded on the top side.

O.K.! Here's your assignment (once a teacher, always a teacher, I guess)! Next time you have that horde of boxelder bugs on your house, pick one up and examine its mouthparts. The piercing-sucking beak is held on the underside in a rearward position between the pairs of legs. If you have a hand lens the parts will really show up. Also, look at the little triangle at the top rear of the bug. And if you can catch one flying, you will easily be able to see the "half-wing" structure of the forewings. Next, lift up some rocks or wood in your yard and look for a black beetle hiding here. Observe the front wings meeting in the middle in a straight line. Also note the hardness of those forewings. But be careful! Those biting mouthparts are used for defense as well as eating!

Write up your lab report, and I'll grade it the next time we meet!

